Slope-Intercept Form of the Equation of the Line $y = \boldsymbol{m}\,x + \boldsymbol{b}$

Find the **y-intercept b, (0, b)** between two points $(\boldsymbol{x_1}, \boldsymbol{y_1})(\boldsymbol{x_2}, \boldsymbol{y_2})$.

Process: Find the Slope, m.	**Explanation**
$(1, -3)(5, 4)$ Solve for m, $m = \frac{7}{4}$	Use the Slope Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$ for points $(x_1, y_1)(x_2, y_2)$
$y = mx + \boldsymbol{b}$ $\quad y = \frac{7}{4}x + \boldsymbol{b}$	Use the slope-intercept form of the equation & *substitute the value of m* into the equation.
$(1, -3)$ $\quad y = \frac{7}{4}x + \boldsymbol{b}$	***Evaluate*** the equation using the known values. Choose one of the points (1, -3)
$-3 = (\frac{7}{4}) \cdot (1) + \boldsymbol{b}$	***Substitute*** the coordinates x=1 and y=-3 into the equation.
$-3 = \frac{7}{4} + \boldsymbol{b}$	***Simplify & Solve***